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Application Serial No. 10/761,847
Reply to office action of January 26, 2006

PATENT
Docket: CU-3547

REMARKS/ARGUMENTS

Reconsideration is respectfully requested.

Claims 1-6 and 8-14 were pending in the present application before this amendment (claims 15-19 have been withdrawn). By the present amendment, claim 1 is amended.

In the office action, claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,309,930 (Goebel). The "et al." suffix is omitted in a reference name.

The examiner rejects claim 1 of the present invention as being anticipated by Goebel on grounds that Goebel allegedly discloses a thin-film transistor formed on a substrate S with a concavoconvex surface, on which: a source electrode 2S & 4S and a drain electrode D1 & D2 are formed on adjacent convex portions of the concavoconvex surface; and a semiconductor channel layer and a gate electrode Ga2 & Ga4 formed on a concave area between the convex portion.

In FIG. 6A, for example, Goebel discloses one type of a thin-film transistor wherein source/drain regions 2S/D2 and source/drain regions 4S/D1 are formed on adjacent convex portions. However, in this Goebel transistor, since Ga2 is formed in vicinity of 2S/D1 and 2S/D2, the electric current between 2S/D1 and 2S/D2 is or should be determined as being controlled by voltage of Ga2. That is, in the transistor of Goebel, the electric current between the source/drain regions formed on a concave portion and source/drain regions formed on a convex portion adjacent said concave portion is controlled by the voltage of a gate electrode formed on a side portion which connects said concave portion and said convex portion.

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On the other hand, in the thin-film transistor as presently claimed in amended claim 1, --electric current between the source electrode and the drain electrode formed on the adjacent convex portions is controlled by voltage of the gate electrode formed on the concave area located between the source electrode and the drain electrode--. This should be clear from the arrangement of each component of the thin-film transistor disclosed in FIGS. 1- 2, and these figures support the amendment of claim 1.

Since the thin-film transistor as claimed in the present invention is formed by utilizing a level difference (unevenness or step) of the surface of the fine concavoconvex surface formed on the substrate with high dimensional accuracy, each transistor component such as source electrode, drain electrode, gate electrode and semiconductor channel layer are formed extremely fine and with high dimensional accuracy. In the presently claimed invention, by controlling the electric current between the source electrode and the drain electrode, formed on such adjacent convex portions formed with high dimensional accuracy, by the voltage of the gate electrode, formed with high dimensional accuracy utilizing the level difference of the concave area located between the source electrode and the drain electrode, the transistor whose channel region is uniform performance over a large area can be obtained.

Thus, the electrodes and the like of the transistor are formed on the concavoconvex surface on the substrate. However, arrangements of the source/drain electrode formed as a pair and the gate electrode, which controls the source/drain electrodes, are quite different between the Goebel's and the presently claimed invention. In the presently claimed invention, since the level difference of the concavoconvex surface formed on the substrate with high dimensional accuracy is utilized to form each

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electrode so as "electric current between the source electrode and the drain electrode formed on the adjacent convex portions is controlled by voltage of the gate electrode formed on the concave area located between the source electrode and the drain electrode", the thin-film transistor having uniform performance over a large area can be obtained. Accordingly, the presently claimed invention is quite different from Goebel.

Further, it is respectfully submitted that the amended claim 1 of the present invention is not obvious from Goebel. Therefore, the presently claimed invention does not fall under 35 U.S.C. 102(b) or 103(a).

For the reasons set forth above, the applicant respectfully submits that claims 1-6 and 8-14, now pending in this application either has been allowed or are in condition for allowance. Accordingly, the applicant respectfully requests a Notice of Allowance in the next action.

When issuance of a Notice of Allowance is proper in the next action, the examiner is authorized to cancel the withdrawn claims, for which the applicant reserves the right to file a divisional application. Should the examiner have any remaining questions or concerns, the examiner is encouraged to contact the undersigned attorney by telephone to expeditiously resolve such concerns.

Respectfully submitted,



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